

Notes on the Opisthobranchs of the West Coast of North America - IV. A Distributional List of Opisthobranchs from Point Conception to Vancouver Island

BY

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In recent years there has been an intensified interest in opisthobranch mollusks on the west coast of North America as evidenced by the contributions of MARCUS (1961), LANCE (1961, 1962a, 1962b), GONOR (1961), BEEMAN (1963a, 1963b), STEINBERG (1960, 1961, 1963a, 1963b) and others. In addition to these studies, further work on the systematics, geographical distribution, morphology and ecology of these mollusks is currently being conducted. Accordingly, it seems desirable at this time to clarify our present knowledge of the systematic identity and distribution of opisthobranchs on our Pacific Coast.

LANCE (1961) has summarized the distribution of opisthobranchs on the west coast of North America south of Point Conception. This list was preceded by a commentary on several species whose systematic status was in question (STEINBERG, 1961). The present work is an extension of LANCE's list for species which are found north of Point Conception.

The marine province treated in this paper is defined as that region from Point Conception, California to Vancouver Island, British Columbia, although the ranges of a number of species may continue north to Alaska and the Western Pacific or south to Southern and Lower California. The cephalaspideans have been discussed in another paper (STEINBERG, 1963a). Also excluded are the pteropods, the onchidiaceans and the pyramidellids. The systematic status of several species, whose names needed reviewing, has been discussed in another paper (STEINBERG, 1963b - see article preceding this paper). A dagger (†) precedes the species name of each species so treated.

The systematic arrangement used follows that of ODHNER (1939). The habitats listed are similar to those used by LANCE. They are divided into (1) intertidal; (2) subtidal; (3) offshore kelp, referring specifically to *Macrocystis pyrifera* in sheltered areas such as Monterey Bay; (4) boat landings, pilings, wharves and buoys in bays

and estuaries; and (5) mudflats, including rocky areas associated with them, in bays. The information concerning relative abundance is based on approximately 160 field trips along the California coast over the past 15 years, principally to Moss Beach, San Mateo County; the Monterey Peninsula; San Francisco Bay and the Marin and Sonoma County outer coasts and bays. In addition, numerous collections, both alive and preserved, have been examined from these areas. Material, both alive and preserved, from the Mendocino and Humboldt County coasts, has also been examined on several occasions. Although I have collected in the San Juan Island, Washington area only once, I have obtained further information on the distribution of animals in the northern limit of the range by examining collections from the Friday Harbor Laboratory and in conversations with Mr. Jefferson Gonor (University of Washington).

The degrees of abundance are arbitrarily indicated as (1) - common: at least several specimens will be encountered in incidental collecting and many more may be found if collecting is intensive; (2) - uncommon: one or two specimens may be found in incidental collecting and only a few more may be found if collecting is intensive; (3) - rare: only a few individuals have ever been collected; (4) - known only from the type locality, and indicating that the species has never been collected except by the original collector.

New ranges are followed by the old in parentheses. A single asterisk (*) preceding a species name indicates that I have never collected that form north of Point Conception. Two asterisks (**) signify that I have never seen any specimens which could be referred to this species. Latitudes and longitudes for the geographical localities mentioned in the list are given in the following table. Most of the references will be found in the bibliography of MARCUS (1961). Those which are not listed there will be found in the list of references at the end of this paper.

Alaska

Sitka 57° 03' N 135° 20' W

British Columbia

Vancouver Island (Nanaimo)
49° 10' N 123° 56' W

Washington

San Juan Island 48° 30' N 123° 00' W

Oregon

Coos Bay 43° 20' N 124° 10' W

California

Crescent City 41° 45' N 124° 10' W
Humboldt Bay (Eureka) 40° 45' N 124° 14' W
Shell Beach (Sonoma County)

38° 25' N 123° 08' W

Bodega Bay 38° 18' N 123° 03' W

Dillon Beach 38° 14' N 122° 58' W

Tomales Bay 38° 14' N 122° 59' W

Bolinas Bay 37° 55' N 122° 40' W

San Francisco Bay 37° 47' N 122° 27' W

Moss Beach 37° 32' N 122° 31' W

Santa Cruz 36° 58' N 122° 01' W

Point Pinos (Pacific Grove)

36° 38' N 121° 55' W

Monterey 36° 37' N 121° 53' W

Pismo Beach 35° 09' N 120° 38' W

Point Conception 34° 27' N 120° 28' W

Laguna Beach 33° 32' N 117° 44' W

Ja Jolla 32° 52' N 117° 15' W

San Diego 32° 42' N 117° 11' W

Point Loma 32° 40' N 117° 14' W

México

Los Coronados Islands 32° 24' N 117° 14' W

Bahía de Los Angeles 28° 55' N 113° 32' W

Cedros Island 28° 22' N 115° 12' W

Point Eugenia 27° 51' N 115° 05' W

La Paz 24° 10' N 110° 19' W

Cape San Lucas 22° 52' N 109° 53' W

ANASPIDEA

APLYSIIDAE

Aplysiinae

Aplysia californica COOPER, 1863

Rare intertidally at northern end of range. Humboldt Bay to the Gulf of California (Bodega Bay to the Gulf of California).

Dolabriferinae

Phyllaplysia taylori (DALL, 1900)

Common intertidally and subtidally in muddy bays on the eelgrass, *Zostera marina*. San Juan Island to San Diego Bay.

NOTASPIDEA

Pleurobranchacea

PLEUROBRANCHIDAE

Pleurobranchus californicus DALL, 1900

Rare intertidally; uncommon subtidally. Crescent City to San Diego.

SACOGLOSSA

Elysiacea

ELYSIIDAE

Elysia hedgpethi MARCUS, 1961

Seasonally common intertidally on *Codium* sp. and on mudflats on *Ulva* sp. San Juan Island to La Jolla (Tomales Bay to La Jolla).

OLEIDAE

** *Olea hansineensis* KJERSCHOW AGERSBORG, 1923

Common in bays. San Juan Island (*vide* GONOR, 1961).

STILIGERIDAE (=HERMAEIDAE)

Alderia modesta (LOVÉN, 1844)

Common on *Salicornia* marshes associated with *Vaucheria* sp. San Juan Island to Elkhorn Slough; Europe.

** *Hermatea vancouverensis* O'DONOGHUE, 1924

Known only from type locality. Vancouver Island.

Hermatea smithi MARCUS, 1961

Seasonally common in high intertidal pools and on mudflats. San Juan Island to San Diego.

Stiliger fuscovittata LANCE, 1962

Seasonally common, April through June, in bays on *Polysiphonia* sp. San Juan Island to San Diego (San Diego).

NUDIBRANCHIA

Doridacea

EUDORIDACEA

Cryptobranchia

DORIDIDAE

Glossodoridinae

Cadlina flavomaculata MACFARLAND, 1905

Uncommon intertidally. Vancouver Island to Point Eugenia.

Cadlina marginata MACFARLAND, 1905

Common intertidally and subtidally. Vancouver Island to Point Eugenia.

* *Glossodoris californiensis* (BERGH, 1879)

Rare at northern end of range. Monterey to the Coronado Islands.

** *Glossodoris dalli* (BERGH, 1879)

Known only from the type locality. Puget Sound.

Glossodoris macfarlandi (COCKERELL, 1902)

Rare subtidally at northern end of range. Monterey to the Coronado Islands.

* *Glossodoris porterae* (COCKERELL, 1902)

Rare at northern end of range. Monterey to Cedros Island.

Thorunninae

Aldisa sanguinea (COOPER, 1862)

Common intertidally at Point Pinos; otherwise rare intertidally. Bodega Bay to San Diego; Japan.

Rostanga pulchra MACFARLAND, 1905

Common intertidally. Vancouver Island to Chile; Japan.

Doridinae

† *Doris odonoghuei* STEINBERG, 1963

Vancouver Island to San Juan Island (Vancouver Island).

Archidoridinae

Archidoris montereyensis (COOPER, 1862)

Common intertidally and on bay boat landings and pilings. Alaska to San Diego.

Discodoridinae

Anisodoris nobilis (MACFARLAND, 1905)

Common intertidally, subtidally and on bay boat landings and pilings. Vancouver Island to the Coronado Islands.

Diaulula sandiegensis (COOPER, 1862)

Common intertidally; uncommon subtidally. Japan to Cape San Lucas.

Discodoris heathi MACFARLAND, 1905

Seasonally common intertidally during summer months; otherwise uncommon. Vancouver Island to Laguna Beach.

Platydoridinae

* *Platydoris macfarlandi* HANNA, 1951

Subtidally to about 516 feet. Pismo Beach.

Phanerobranchia

NONSUCTORIA

NOTODORIDIDAE

Aegires albopunctatus MACFARLAND, 1905

Seasonally common intertidally, January through August; common subtidally. Vancouver Island to the Coronado Islands.

POLYCERIDAE

Polycera atra MACFARLAND, 1905

Seasonally common in bays on boat landings and pilings on *Bugula* sp., April through September; rare intertidally and subtidally. San Francisco Bay to the Coronado Islands.

Polycera zosterae O'DONOGHUE, 1924

Rare intertidally and on bay boat landings. Vancouver Island to San Juan Island (Vancouver Island).

Polycera sp.

Uncommon on undersurfaces of bay boat landings on *Bugula* sp., August and September. Tomales Bay to San Francisco Bay.

Laila cockerelli MACFARLAND, 1905

Seasonally common intertidally in winter and spring; otherwise uncommon. Vancouver Island to Cape San Lucas.

TRIOPHIDAE

Triopha carpenteri (STEARNS, 1873)

Common intertidally and subtidally. Vancouver Island to San Diego (Dillon Beach to San Diego); Japan.

Triopha elioti O'DONOGHUE, 1921

Rare intertidally and subtidally. Vancouver Island to San Juan Island (Vancouver Island).

Triopha grandis MACFARLAND, 1905

Seasonally common during summer months on offshore kelp. Santa Cruz to Catalina Island.

Triopha maculata MACFARLAND, 1905

Immature forms common intertidally; mature forms uncommon intertidally and on boat landings in San Francisco Yacht Harbor. Bodega Bay to San Diego.

SUCTORIA

ONCHIDORIDIDAE

** *Acanthodoris atrogriolata* O'DONOGHUE, 1927

Known only from the type locality. Vancouver Island.

** *Acanthodoris armata* O'DONOGHUE, 1927

Known only from the type locality. Vancouver Island.

Acanthodoris hudsoni MACFARLAND, 1905

Rare intertidally. Vancouver Island to Monterey Bay.

Acanthodoris lutea MACFARLAND, 1925

Seasonally common intertidally during summer months, population peak in August. Dillon Beach to Point Loma (Moss Beach to Point Loma).

† *Acanthodoris nanaimoensis* O'DONOGHUE, 1921

Seasonally common intertidally during summer months. Vancouver Island to Moss Beach (Vancouver Island).

** *Acanthodoris pilosa* (ABILDGAARD, 1789)

Intertidal and subtidal to 180 feet. Alaska to Vancouver Island; circumboreal.

Acanthodoris rhodoceras COCKERELL & ELIOT, 1905

Seasonally common intertidally, on bay boat landings and on mudflats in summer months. Dillon Beach to the Coronado Islands.

Onchidoris bilamellata (LINNAEUS, 1767)

Seasonally common intertidally, subtidally and on bay boat landings during summer months. Alaska to Monterey Bay (Alaska to Bodega Bay); circumboreal.

Onchidoris hystricina (BERGH, 1878)

Common intertidally and on mudflats during summer months; subtidal to 54 feet. Alaska to Point Loma (Alaska to Dillon Beach).

GONIODORIDIDAE

Ancula pacifica MACFARLAND, 1905

Rare intertidally during summer months. Moss Beach to Point Loma.

Hopkinsia rosacea MACFARLAND, 1905

Seasonally common intertidally and subtidally. Coos Bay to Point Loma (Eureka to Point Loma).

****** *Okenia vancouverensis* (O'DONOGHUE, 1921)

Known only from type locality. Vancouver Island.

† *Okenia plana* BABA, 1960

Common on rocks on mudflats at China Camp, Marin County, San Francisco Bay; rare on bay boat landings and subtidally in San Francisco Bay; Japan (Japan).

Trapania velox (COCKERELL, 1901)

San Francisco Bay to San Diego. [San Francisco Bay is a doubtful locality, quoted by LANCE (1961) from my records.]

CORAMBIDAE

Corambe pacifica MACFARLAND & O'DONOGHUE, 1929

Seasonally common during summer months on colonies of *Membranipora* sp., on offshore kelp. Vancouver Island to Point Eugenia.

Corambella steinbergae LANCE, 1962

Seasonally common during summer months on colonies of *Membranipora* sp., on offshore kelp. San Juan Island to the Coronado Islands.

POROSTOMATA

DENDRODORIDIDAE

Dendrodoris albopunctata (COOPER, 1863)

Common intertidally and subtidally. Salt Point to Point Eugenia (Bollinas Bay to Point Eugenia).

DENDRONOTACEA

TRITONIIDAE

****** *Tritonia diomedea* BERGH, 1894

Subtidal. Alaska to Vancouver Island.

Tritonia exsulans BERGH, 1894

Intertidal and subtidal to 1020 feet. Vancouver Island to Lower California; Japan; Manatee Bay, Florida.

Tritonia festiva (STEARNS, 1873)

Common intertidally and subtidally under ledges. Vancouver Island to the Coronado Islands.

****** *Tritoniopsis tetraquetra* (PALLAS, 1788)

Intertidal and subtidal. Alaska to Monterey Bay; circumboreal.

HANCOCKIIDAE

Hancockia californica MACFARLAND, 1923

Rare intertidally at northern end of range. Dillon Beach to Lower California.

DENDRONOTIDAE

Dendronotus frondosus (ASCANIUS, 1774)

Common intertidally and subtidally; common during summer months on campanularid hydroids on bay boat landings; uncommon on algae and hydroids on mudflats; uncommon on offshore kelp. Cosmopolitan in northern hemisphere.

Dendronotus iris COOPER, 1862

Uncommon subtidally and on mudflats. Vancouver Island to the Coronado Islands.

DOTONIDAE

Doto columbiana O'DONOGHUE, 1921

Uncommon intertidally and subtidally to 140 feet. Vancouver Island to Dillon Beach.

Doto amyra MARCUS, 1961

Intertidally and on bay boat landings. Monterey.

Doto ganda MARCUS, 1961

Intertidally and on bay boat landings. Dillon Beach to Monterey.

Doto kya MARCUS, 1961

Intertidally and on bay boat landings. Moss Beach to Monterey wharf and Point Pinos (Point Pinos).

Doto wara MARCUS, 1961

Intertidally and on bay boat landings. Dillon Beach to Point Pinos.

TETHYIDAE

Melibe leonina (GOULD, 1853)

Seasonally common on offshore kelp and on kelp in boat harbors. Alaska to La Paz Bay.

Arminacea

EUARMINACEA

ARMINIDAE

Armina californica (COOPER, 1862)

Common subtidally at northern end of range; uncommon subtidally in Central California. Vancouver Island to Panama.

PACHYGNATHA

DIRONIDAE

Dirona albolineata COCKERELL & ELIOT, 1905

Sporadically common intertidally, on mudflats and on bay boat landings. Vancouver Island to Laguna Beach.

Dirona picta COCKERELL & ELIOT, 1905

Seasonally common intertidally during summer months; at other times rare. Dillon Beach to Point Loma.

ANTIOPELLIDAE

† *Antiopella fusca* (O'DONOGHUE, 1924)

Rare intertidally and subtidally. Vancouver Island to Monterey Bay (Vancouver Island).

Eolidacea

PLEUROPROCTA

CORYPHELLIDAE

Coryphella fusca O'DONOGHUE, 1921

Uncommon on boat landings; subtidal to 210 feet. Vancouver Island to San Juan Island (Vancouver Island)

Coryphella longicaudata O'DONOGHUE, 1922

Uncommon intertidally. Vancouver Island to San Juan Island (Vancouver Island).

† *Coryphella trilineata* O'DONOGHUE, 1921

Common intertidally, on bay boat landings and on mudflats; also subtidally at northern end of range. Vancouver Island to the Coronado Islands (Vancouver Island).

FLABELLINIDAE

Flabellina iodinea (COOPER, 1862)

Rare intertidally at northern end of range. Vancouver Island to the Coronado Islands.

ACLEIOPROCTA

EUBRANCHIDAE

Capellinia rustya MARCUS, 1961

Seasonally common on bay boat landings. San Francisco Bay to Bahía de Los Angeles.

Eubranhus olivaceus (O'DONOGHUE, 1922)

Seasonally common during summer months intertidally and on boat landings. Vancouver Island to San Juan Island (Vancouver Island).

† *Tenellia pallida* (ALDER & HANCOCK, 1855)

Seasonally common from March to June on bay boat landings and pilings. San Francisco Bay to Monterey Bay; Europe.

FIONIDAE

Fiona pinnata ESCHSCHOLTZ, 1831

Sporadically common on floating wood with small lepadid barnacles. Cosmopolitan.

CUTHONIDAE

** *Catriona columbiana* (O'DONOGHUE, 1922)

Subtidal to 72 feet. Vancouver Island.

† *Catriona lagunae* (O'DONOGHUE, 1926)

Common intertidally during summer months. Moss Beach to Laguna Beach (Laguna Beach).

** *Cuthona concinna* (ALDER & HANCOCK, 1843)

Intertidal. Vancouver Island; British Isles.

Preculhona divae MARCUS, 1961

Uncommon intertidally. Dillon Beach to Monterey (Dillon Beach).

CLEIOPROCTA

FACELINIDAE

Hermisenda crassicornis (ESCHSCHOLTZ, 1831)

Common intertidally, subtidally, on bay boat landings and on mudflats. Sitka, Alaska to Point Eugenia.

PHIDIANIDAE

Phidiana pugnax LANCE, 1962

Seasonally common intertidally and subtidally in January and July on Monterey Peninsula; otherwise rare. Monterey to the Coronado Islands.

AEOLIDIIDAE

Aeolidia papillosa (LINNAEUS, 1761)

Uncommon intertidally, subtidally and on mudflats. Cosmopolitan.

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A New Member of the Genus *Atagema*
(Gastropoda: Nudibranchia)
a Genus New to the Pacific Northeast

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(5 Text figures)

Despite the fact that the Pacific Northeast has been extensively worked with regard to the nudibranchiate fauna there still remains a great deal to be done. In addition to much review work that is needed, there seem to remain many species that have been missed, due either to faulty collecting, or, more likely, due to their rarity.

The latter is the case with the following animal. It is one of the "novelties" MARCUS (1961, page 56) speaks of, that can be expected to turn up on this coast with the recent increase of collecting activity.

I wish to thank all those who were kind enough to send me literature and give assistance in other ways. I am especially grateful to Mr. Wesley Farmer of the San Diego Museum of Natural History and Dr. William Hazen of San Diego State College for their help and encouragement in preparing this paper and Jessie Zimmerman for the preparation of the figures. The work was conducted at San Diego State College.

Cryptobranchia

DORIDIDAE

Archidoridinae

Atagema quadrimaculata COLLIER, spec. nov.

The one animal collected measured 30 mm in length and 11 mm in width when actively crawling. Preserved it measures 16 mm and 8 mm respectively. The body form is similar to the shape of the other members of the genus with the front rounded and the posterior end slightly pointed. The foot measures 25 mm in length and 8 mm in width; it extends about 2 mm beyond the notum at the posterior end.

The notum has a coarse texture due to the many small papillae covering it as well as the spicules in it. The notum is a very light beige, almost white, with the papillae a darker beige. The presence of these papillae gives the animal a beige sponge-like appearance. The color of the